ORDER NO. GAD8605569C1
A1

Service Manual

Radio Cassette

RX-SA70

Silver
Black
Red

Stereo Radio Cassette Player

STEREO
EQUALIZER
AUTO REVERSE
Panasonic

This is the Service Manual for the following areas.

[M] ···For U.S.A.

[C] ···For Canada.

•Color Variation

[M]	[C]
(Silver) (Black) (Red)	(Silver) (Black)

RQ-J16 MECHANISM SERIES

■ SPECIFICATIONS

General:

Power Requirement:	Battery; 3V (two "AA" size Penlight batteries) (Panasonic UM-3 or equivalent)
Power Output:	25mW+25mW...RMS max.
Input:	DC IN; 3V
Output:	Headphones; 32Ω, 3.5ϕ
Dimensions:	$3^{5}/_{16}$"(W)×5"(H)×$1^{1}/_{2}$"(D) (8.5cm (W)×12.7cm (H)×3.85cm (D)
Weight:	310g (11 oz) without batteries

Radio Section:

Radio Frequency Range:	FM; 88~108MHz AM; 525~1610kHz
Intermediate Frequency:	FM; 10.7MHz AM; 455kHz
Sensitivity:	FM; 2.5µV/0.5mW (−3dB Limit, Sens) AM; 224µV/m/0.5mW output

Tape Deck Section:

Frequency Response:	80~10,000Hz
Tape Speed:	4.8cm/s ($1^{7}/_{8}$ ips)
Track System:	4-track 2-channel stereo playback

Weights and dimensions shown are approximate.
(Les poids et dimensions mentionnes sont approximatifs.)
Design and specifications are subject to change without notice.

Panasonic®

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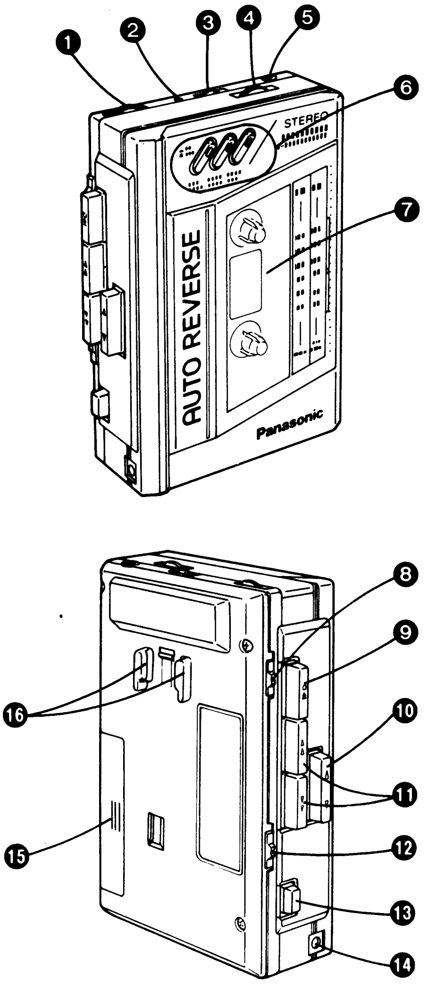
LOCATION OF CONTROLS



- ❶ **Volume Control (VOLUME)**
- ❷ **FM Stereo Indicator (FM STEREO)**
- ❸ **Band Selector (BAND)**
- ❹ **Tuning Control (TUNING)**
- ❺ **Headphones Jack (🎧) ϕ3.5, 32Ω**
- ❻ **Combination Equalizer Switches**
- ❼ **Cassette Compartment**
- ❽ **FM Sensitivity Selector (FM SENS)**
- ❾ **Stop/Eject Button (■/▲ STOP/EJECT)**
- ❿ **Playback Button (⇕ PLAY)**
- ⓫ **Fast Buttons (⇞•⇟ FAST)**
- ⓬ **Function Selector (SELECTOR)**
- ⓭ **Direction Button (DIRECTION)**
- ⓮ **DC Input Jack (DC IN 3 V⊖-◉-⊕)**
- ⓯ **Battery Compartment**
- ⓰ **Clip Receptacle**

BATTERY SERVICE LIFE

UM-3 (AA-size) Batteries
Approx. 2.2 hours of playback (EIAJ) with volume set at 3/4 position

The above battery service life is measured according to the conditions set forth by EIAJ (Electronic Industries Association of Japan). As the battery service life varies with the method of operation and envirommental conditions, use these values as reference.

DISASSEMBLY INSTRUCTIONS

■ Remove the Rear Cabinet

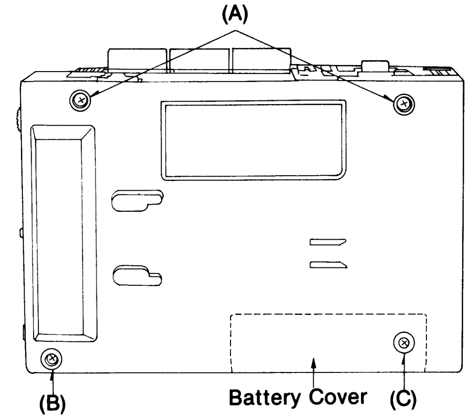


Fig. 1

1. Remove the Battery cover. (Fig. 1)
2. Remove the screws (A) (2.6×30)mm×2. (Fig. 1)
3. Remove the screw (B) (2×24)mm×1. (Fig. 1)
4. Remove the screw (C) (2×6)mm×1. (Fig. 1)

■ Remove the Mechanism & Circuit Board

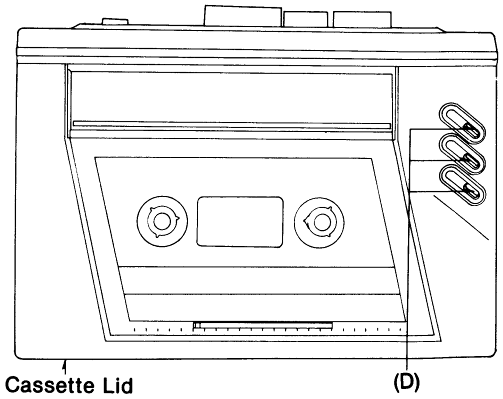


Fig. 2

When remove the button of push switch, be carefull to set the switch in off position.

1. Open the Cassette Lid. (Fig. 2)
2. Remove the Equalizer Buttons (D)×3. (Fig. 2)
3. Remove the Operation Panel (E)×1. (Fig. 3)
4. Remove the Screw (F) (2×6)mm×1. (Fig. 3)

■ Remove the Mechanism

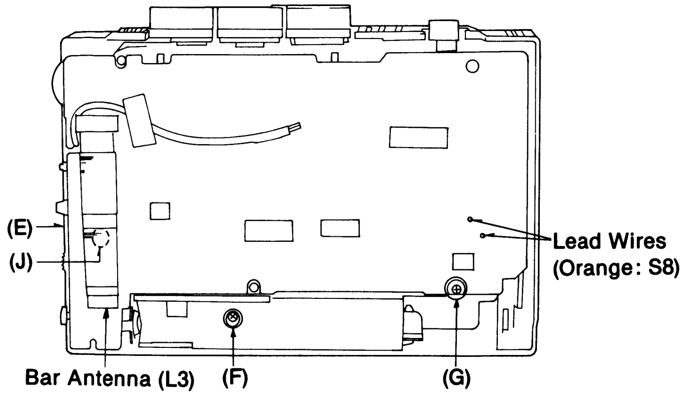


Fig. 3

1. Disconnect the soldered connections of the lead wires. (Fig. 3)
2. Remove the screw (G) (1.7×3)mm×1. (Fig. 3)

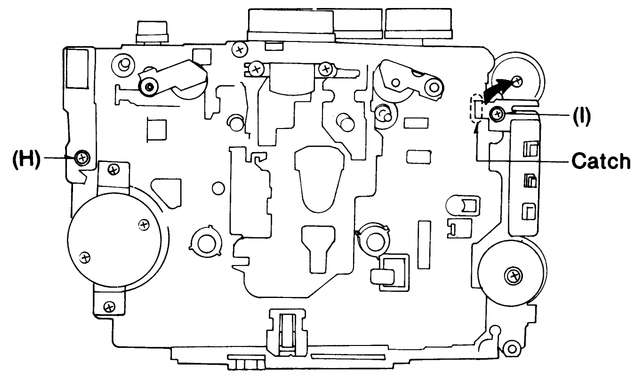


Fig. 4

3. Remove the screw (H) (2×6)mm×1. (Fig. 4)
4. Remove the screw (I) (2×4)mm×1. (Fig. 4)
5. Remove the catch in the direction of arrow. (Fig. 4)

■ Remove the Dial Chassis

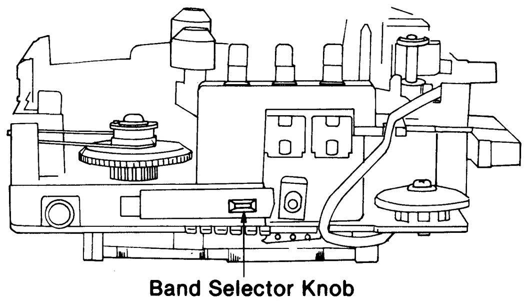


Fig. 5

1. Remove the Band Selector Knob. (Fig. 5)
2. Remove the Bar Antenna (L3). (Fig. 3) (Adjust the AM RF after removing.)
3. Remove the screw (J) (2×6)mm×1. (Fig. 3)

■ Remove the Cassette Lid

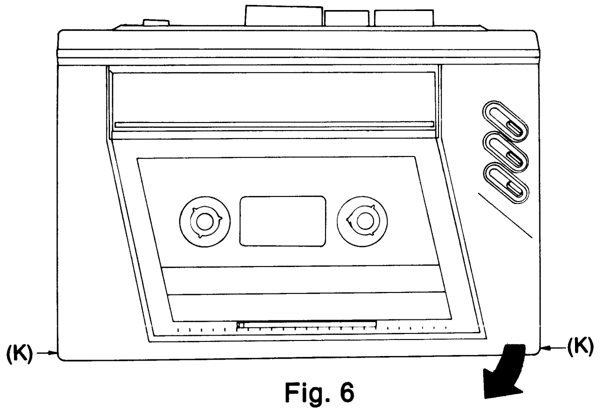


Fig. 6

1. Remove the screws (K)×2.
2. Remove the Cassette Lid in the direction of arrow, and disconnect the inside catch.

∗ When install the Cassette Lid, be sure the Dial Pointer are inserted firmly in the Dial Pointer Holder.

■ Dial Setting Point

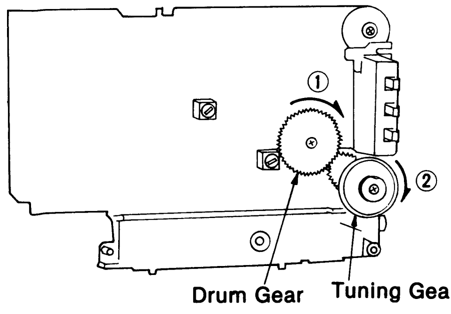
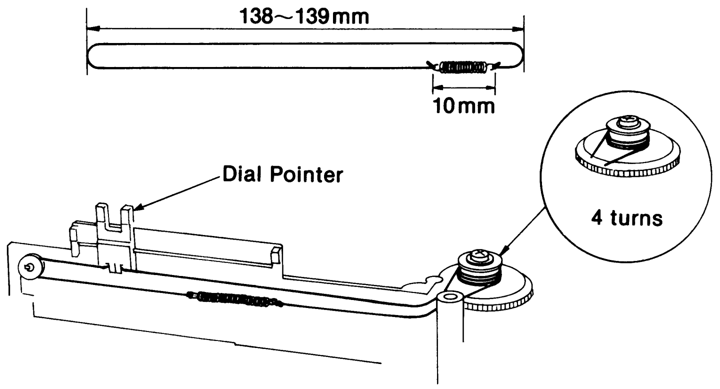


Fig. 7

1. Turn the Drum Gear & Tuning Knob fully in the direction of the arrow ①, ②. (Fig. 7)
2. Re-fix the Chassis of the Dial.

DIAL THREADING



MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set Equalizer switch to OFF.
3. Set band switch to AM or FM ST.
4. Set selector switch to radio.
5. Set power source voltage to 3V DC.
6. FM Sens switch to DX.
7. Output of signal generator should be no higher than necessary to obtain an output reading.

■ AM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
	AM-IF ALIGNMENT						
(1)	AM	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455kHz 30% Mod. at 400Hz	Point of non-interference. (on/about 600kHz)	Output meter across voice coil.	T2 (AM IFT)	Adjust for maximum output.
	AM-RF ALIGNMENT						
(2)	AM	〃	511kHz	Tuning capacitor fully closed.	〃	L4 (AM OSC Coil)	Adjust for maximum output.
(3)	AM	〃	1,670kHz	Tuning capacitor fully open.	〃	CT4 (AM OSC Trimmer)	〃
(4)	AM	〃	550kHz	Tune to signal.	〃	(∗1) L3 (AM ANT Coil)	Adjust for maximum output. Adjust L3 by moving coil bobbin along ferrite core.
(5)	AM	〃	1,500kHz	〃	〃	CT3 (AM ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).

(∗1) Cement antenna bobbin with wax after completing alignment.

■ FM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
	FM-IF ALIGNMENT						
(1)	FM	High side thru. 0.001μF to test point ▼3. Negative side to test point ▼2.	10.7MHz (SWP.)	Point of non-interference. (on/about 90MHz)	Connect vert. amp. of scope to test point ▼5. Negative side to test point ▼7.	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 2.)
(2)	FM	〃	〃	〃	〃	T3 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 3.)
	FM-RF ALIGNMENT						
(3)	FM	Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	86.2MHz	Variable capacitor fully closed.	Output meter across voice coil.	L1 (FM OSC Coil)	(∗2) Adjust for maximum output.
(4)	FM		109.2MHz	Variable capacitor fully open.	〃	CT1 (FM OSC Trimmer)	〃
(5)	FM		90MHz	Tune to signal.	〃	L2 (FM ANT Coil)	〃
(6)	FM		106MHz	〃	〃	CT2 (FM ANT Trimmer)	(∗2) Adjust for maximum output. Repeat steps (3)~(6).

(∗2) Three output responses will be present; proper tuning is the center frequency.

■ SEPARATION ALIGNMENT

ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
Adjustment of pilot signal.	98MHz, 60dB (CW) Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	▼8...(+) ▼7...(−)	VR1	19kHz	Adjust VR1, for 19kHz (±100Hz) reading on electronics counter.

▼ Be sure to fold at the (▼) mark so that mark is on the outside.

SCHEMATIC DIAGRAM

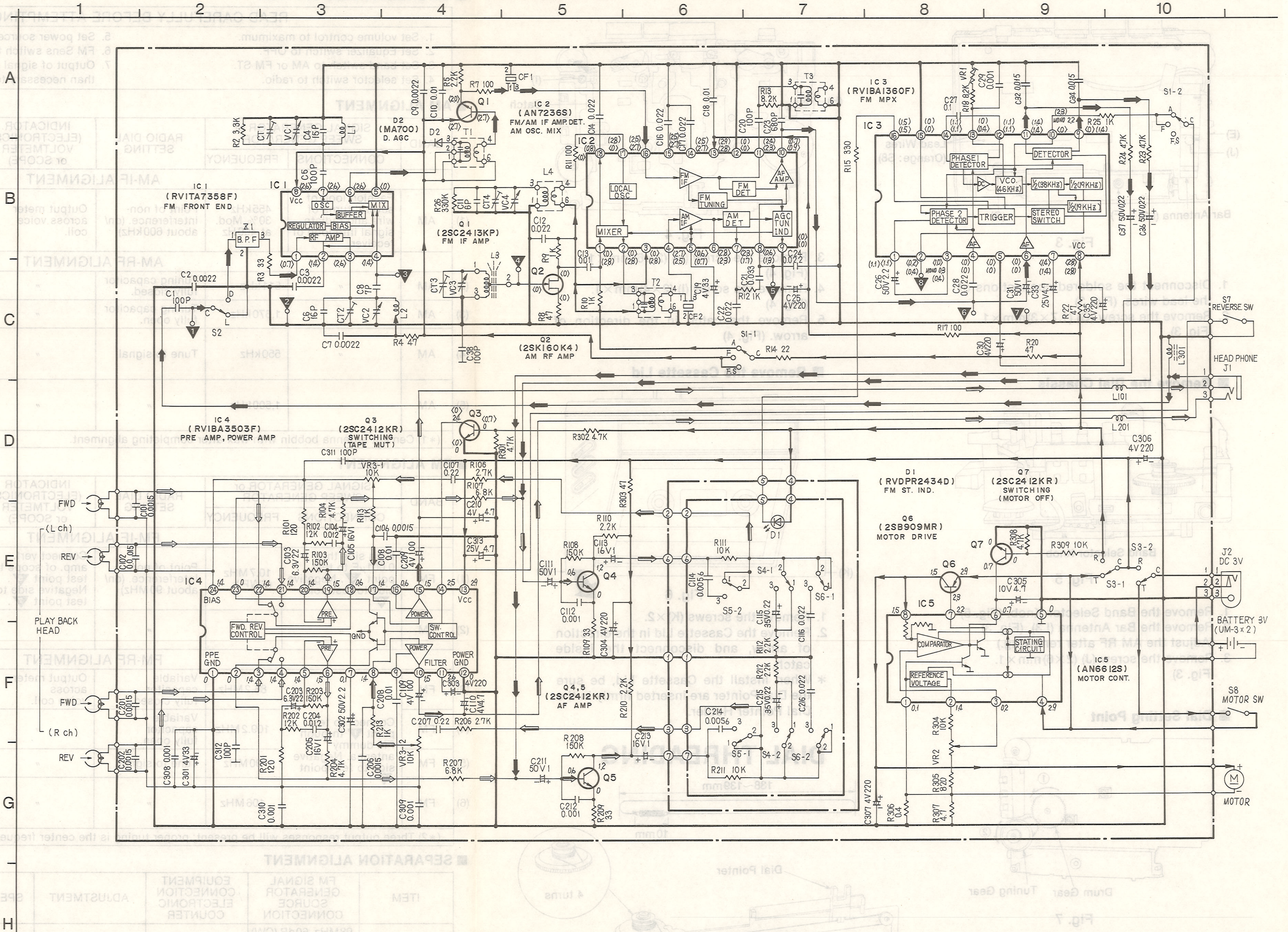
Notes:

1. S1-1, 1-2: Band Selector Switch in "AM" Position.
   (A...AM, F...FM, F.S...FM ST)
2. S2: Sens Switch in "LOCAL" Position.
   (D...D.X, L...Local)
3. S3-1, 3-2: Function Switch in "TAPE" Position.
   (T...Tape, R...Radio)
4. S4-1, 4-2: Low Boost Switch in "OFF" Position.
   (1...OFF, 3...ON)
5. S5-1, 5-2: High Boost Switch in "OFF" Position.
   (1...OFF, 3...ON)
6. S6-1, 6-2: High Cut Switch in "OFF" Position.
   (1...OFF, 3...ON)
7. S7: Reverse Switch in "FWD" Position.
8. S8: Play Switch in "OFF" Position.
9. VR1: FM VCO adjustment VR.
10. VR2: Motor control VR.
11. VR3: Volume control VR.
12. Batter/Current: No Signal..........50mA
    Maximum Out Put
    Tape..........180mA
13. Described is schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes.
    One type number is used for supply parts number and production parts number which they are identical.
    e.g. Q1
    2SC2412NRTB, LNSTB —— Production parts number
    [2SC2412] —————— Supply parts number
14. The mark (▼) shows test point.e.g. ▼1 = test point 1.
15. **The supply parts number is described alone in the replacement parts list.**

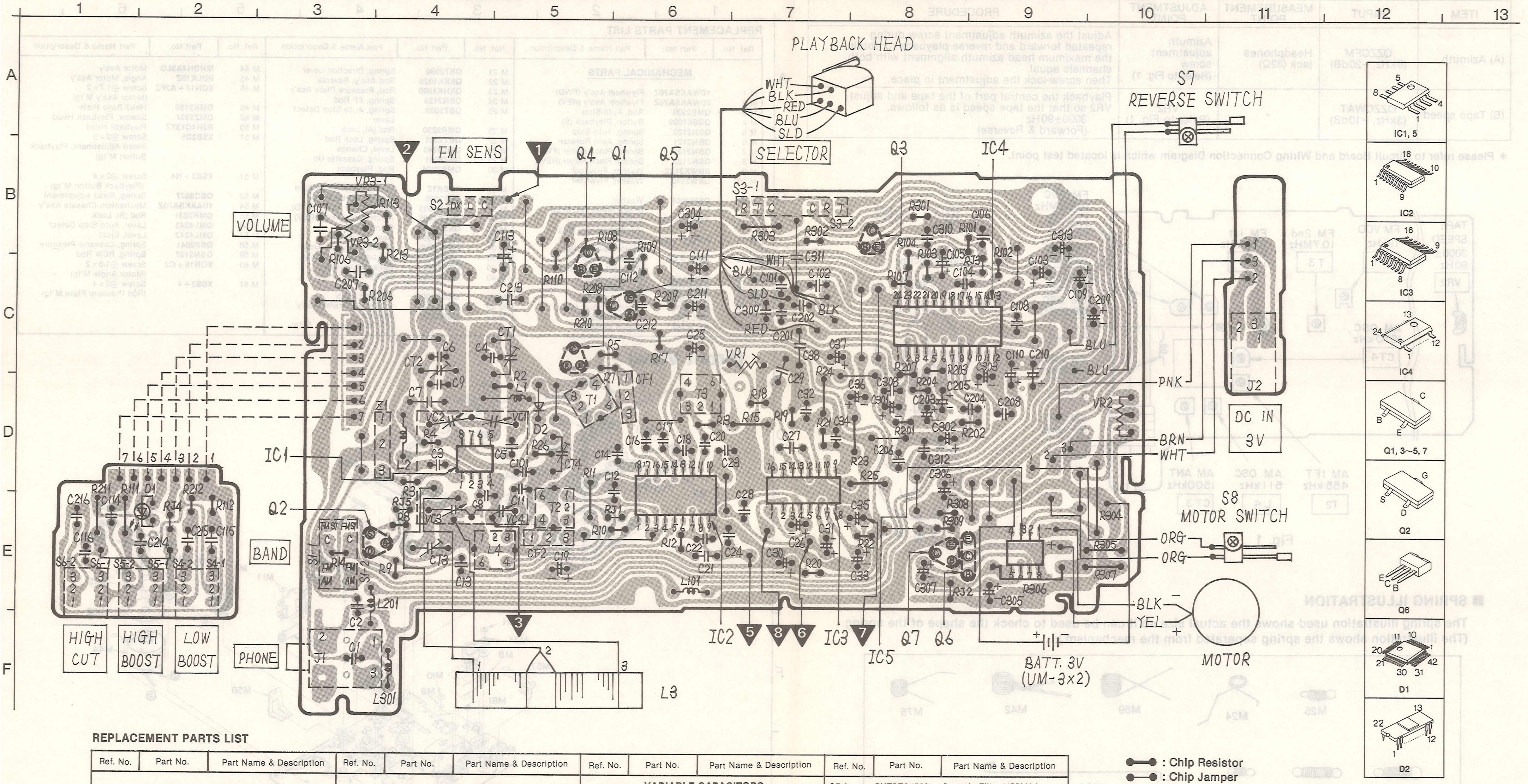
➡ Radio (FM) Signal Line
⇨ Tape Signal Line
⇨ Main (Tape & Radio) Signal Line
➡ ⊕B Line

- **This schematic diagram may be modified at any time with the development of new technology.**

16. DC voltage measurement are taken with electronics voltmeter from negative terminal of battery
    〈 〉...FM position, ( )...AM position,
    No mark...Playback position.


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
IC 1 (RVITA7358F) FM FRONT END
OSC
MIX
BUFFER
REGULATOR
BIAS
RF AMP
Vcc
Z1 B.P.F
R2 3.3K
CT1
VC1
C4 15P
L1
C5 100P
C1 100P
C2 0.0022
C3 0.0022
R3 33
C6 16P
CT2
VC2
L2
C7 0.0022
C8 7P
R4 47
S2
D
C
L
D2 (MA700) D. AGC
C9 0.0022
C10 0.01
R5 2.2K
R7 100
CF1
Q1
T1
Q1 (2SC2413KP) FM IF AMP
R26 330K
C11 6P
CT4
VC4
L4
C12 0.022
L3
CT3
VC3
Q2
R9 1K
R8 47
R10 1K
C13 0.01
C38 100P
Q2 (2SK160K4) AM RF AMP
IC 2 (AN7236S) FM/AM IF AMP.DET. AM OSC. MIX
IC2
R11 100
C14 0.022
C16 0.022
C17 0.022
C18 0.01
C20 100P
C23 680P
R13 8.2K
T3
LOCAL OSC
FM IF
FM DET
FM TUNING
AF AMP
AM IF
AM DET
AGC TUN IND
MIXER
T2
CF2
C19 4V33
C21 0.033
C22 0.022
R12 1K
C24 0.022
C25 4V220
S1-1
A
F
F.S
C
R14 22
R15 330
IC 3 (RVIBA1360F) FM MPX
IC 3
C27 0.1
R18 8.2K
VR1
C29 0.001
C32 0.015
C34 0.015
R25 1K
MONO 2.2
PHASE1 DETECTOR
DC
VCO (46KHz)
½(38KHz)
½(19KHz)
½(19KHz)
DETECTOR
PHASE 2 DETECTOR
TRIGGER
STEREO SWITCH
AF
AF
VCC
MONO 0.3
C26 50V2.2
C28 0.022
C31 50V1
C33 25V4.7
C35 4V220
R22 47
R17 100
C30 4V220
R20 47
S1-2
A
F
F.S
C
R24 4.7K
R23 4.7K
C37 50V0.22
C36 50V0.22
S7 REVERSE SW
L301
HEAD PHONE J1
L101
L201
C306 4V220
IC 4 (RVIBA3503F) PRE AMP, POWER AMP
Q3 (2SC2412KR) SWITCHING (TAPE MUT)
Q3
R301 4.7K
R302 4.7K
C311 100P
VR3-1 10K
C107 0.22
R106 2.7K
R107 6.8K
C210 4V 4.7
C313 25V 4.7
R101 120
R102 12K
C104 0.012
R104 4.7K
R113 1K
C105 16V1
C106 0.0015
C103 6.3V22
R103 150K
C108 0.01
C209 4V100
FWD
REV
FWD
REV
C101 0.0015
C102 0.0015
C201 0.0015
C202 0.0015
(L ch)
(R ch)
PLAY BACK HEAD
IC4
BIAS
PRE
POWER
FWD. REV. CONTROL
GND
SW. CONTROL
PRE
POWER
PPE GND
FILTER
POWER GND
Vcc
C203 6.3V22
R203 150K
R202 12K
C204 0.012
C205 16V1
R204 4.7K
R201 120
C302 50V2.2
C308 0.001
C301 4V33
C312 100P
C310 0.001
R213 1K
C208 0.01
C206 0.0015
C109 4V100
C303 4V220
C110 4V4.7
C207 0.22
R206 2.7K
VR3-2 10K
R207 6.8K
C309 0.001
R303 47
R110 2.2K
R108 150K
C113 16V1
C111 50V1
Q4
C112 0.001
R109 33
C304 4V220
R210 2.2K
Q4,5 (2SC2412KR) AF AMP
R208 150K
C213 16V1
C211 50V1
Q5
C212 0.001
R209 33
R111 10K
C114 0.0056
S4-1
S5-2
C115 35V0.22
C116 0.022
S6-1
R112 2.2K
R212 2.2K
C215 35V0.22
C216 0.022
C214 0.0056
S5-1
S4-2
S6-2
R211 10K
D1
D1 (RVDPR2434D) FM ST. IND.
Q6 (2SB909MR) MOTOR DRIVE
Q7 (2SC2412KR) SWITCHING (MOTOR OFF)
Q7
R308 4.7K
R309 10K
Q6
C305 10V4.7
S3-2
S3-1
R
C
T
IC5
COMPARATOR
STATING CIRCUIT
REFERENCE VOLTAGE
IC5 (AN6612S) MOTOR CONT.
R304 10K
VR2
R305 820
R306 0.4
R307 4.7
C307 4V220
J2 DC 3V
BATTERY 3V (UM-3×2)
S8 MOTOR SW
M
MOTOR

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM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A
B
C
D
E
F
PLAYBACK HEAD
WHT
BLK
RED
BLU
SLD
SELECTOR
S7
REVERSE SWITCH
FM SENS
VOLUME
Q4
Q1
Q5
Q3
IC4
S3-1
S3-2
R T C
C R T
S2 DX L C
VR3-1
VR3-2
VR1
VR2
IC1
IC2
IC3
IC5
Q2
Q6
Q7
BAND
PHONE
HIGH CUT
HIGH BOOST
LOW BOOST
S6-2
S6-1
S5-2
S5-1
S4-2
S4-1
J1
J2
L3
L301
L201
L101
T1
T2
T3
CF1
CF2
DC IN 3V
PNK
BRN
WHT
ORG
ORG
BLK
YEL
S8
MOTOR SWITCH
MOTOR
BATT. 3V (UM-3×2)
IC1, 5
IC2
IC3
IC4
Q1, 3~5, 7
Q2
Q6
D1
D2

● ━ ● : Chip Resistor

●━● : Chip Jamper

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description
		INTEGRATED CIRCUITS
IC 1	**RViTA7358F**	IC (FM Front End)
IC 2	**AN7236S**	IC (FM/AM IF AMP, DET AM OSC, MIX.)
IC 3	**RViBA1360F**	IC (FM MPX)
IC 4	**RViBA3503F**	IC (PRE AMP, Power AMP)
IC 5	**AN6612S**	IC (MOTOR CONT)
		TRANSISTORS
Q 1	**2SC2413KP**	Transistor (FM IF AMP)
Q 2	**2SK160K4**	Transistor (AM RF AMP)
Q 3, 4, 5, 7	**2SC2412KR**	Transistor (SWITCHING (TAPE MUT), AF AMP)
Q 6	**2SB909MR**	Transistor (MOTOR DRIVE)
		DIODES & RECTIFIERS
D 1	**RVDPR2434D**	LED (FM ST IND.)
D 2	**MA700**	Diode (D. AGC)
		COILS
L 1, 2	**RL04Y78**	OSC. ANT Coil, FM
L 3	**RLF2N8**	Antenna Coil, AM
L 4	**RL02A3**	Oscillator Coil, AM
L 101, 201, 301	**RLQZP1R0M**	Choke Coil
		TRANSFORMERS
T 1, 3	**RLi4A4**	IFT, FM 1st, 2nd
T 2	**RLi2A37**	IFT, AM
		VARIABLE CAPACITORS
VC 1, 2, 3, 4	**RCV4LC3R2Q**	Variable Capacitor
		TRIMMER CONDENSERS
CT 1, 2, 3, 4	**RCV10AF1**	Trimme Capacitor
		VARIABLE RESISTORS
VR 1	**EVNA6AA00B14**	VCO Adjustment VR 10kΩ, (B)
VR 2	**EVNB1AA00B32**	Motor Control VR 300Ω, (B)
VR 3	**EVUBAAT50A14**	Volume Control VR 10kΩ, (A)
		CERAMIC FILTERS
CF 1	**RVFSFE107MAZ**	Ceramic Filter (10.7MHz)
CF 2	**RVFPFA455A**	Ceramic Filter (455kHz)
		FILTER
Z 1	**EXCFF76108LM**	Component Combination
		SWITCHES
S 1	**RSS3B32Z**	Switch, Band
S 2	**RSS2A38Z**	Switch, Sensitivity
S 3	**RSS2B38Z**	Switch, Function
S 4, 5, 6	**RSHX065Y**	Switch, Preset Equalizer
S 7	**RSH1A54Z**	Leaf Switch, Reverse
S 8	**RSH1A53Z**	Leaf Switch, Motor
		JACKS
J 1	**RJJD3S5Z**	Jack, Headphones
J 2	**RJJ1B3Z**	Jack, DC IN

■ ALIGNMENT INSTRUCTION

ITEM	INPUT	MEASUREMENT POINT	ADJUSTMENT POINT	PROCEDURE
(A) Azimuth	QZZCFM (8kHz, −20dB)	Headphones jack (32Ω)	Azimuth adjustment screw (Refer to Fig. 1)	Adjust the azimuth adjustment screw during repeated forward and reverse playback to obtain the maximum head azimuth alignment with both channels equal. Then screw-lock the adjustment in place.
(B) Tape speed	QZZCWAT (3kHz, −10dB)	〃	VR2 (Refer to Fig. 1)	Playback the central part of the tape and adjust VR2 so that the tape speed is as follows. 3000±90 Hz (Forward & Reverse)

∗ Please refer to Circuit Board and Wiring Connection Diagram which is located test point.

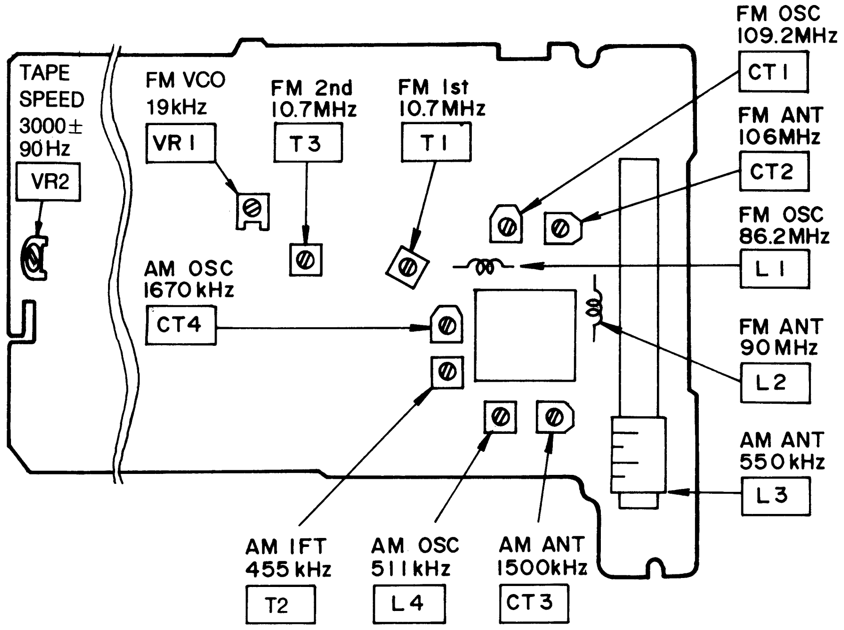

TAPE SPEED 3000± 90Hz
VR2
FM VCO 19kHz
VR1
FM 2nd 10.7MHz
T3
FM 1st 10.7MHz
T1
FM OSC 109.2MHz
CT1
FM ANT 106MHz
CT2
FM OSC 86.2MHz
L1
FM ANT 90MHz
L2
AM ANT 550kHz
L3
AM OSC 1670kHz
CT4
AM IFT 455kHz
T2
AM OSC 511kHz
L4
AM ANT 1500kHz
CT3

Fig. 1

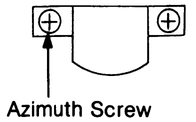

Azimuth Screw

Fig. 1

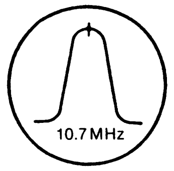


Fig. 2

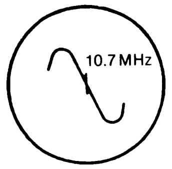
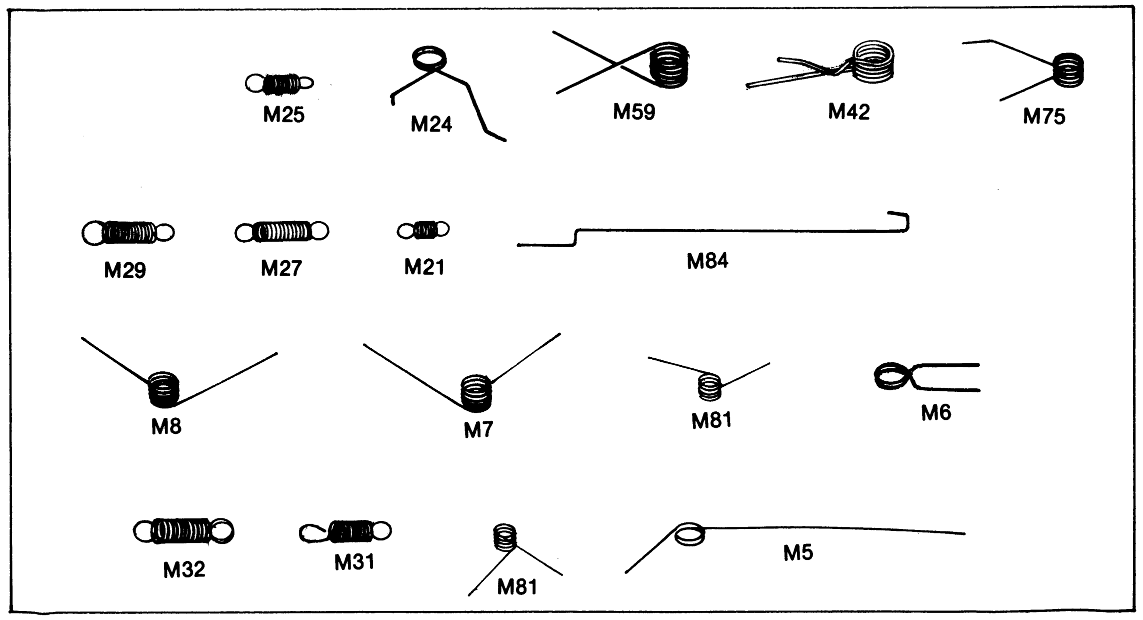


Fig. 3

■ SPRING ILLUSTRATION

The spring illustration used shows the actual size so it can be used to check the shape of the spring. (The illustration shows the spring separated from the mechanism.)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M5

MECHANISM PARTS LOCATION

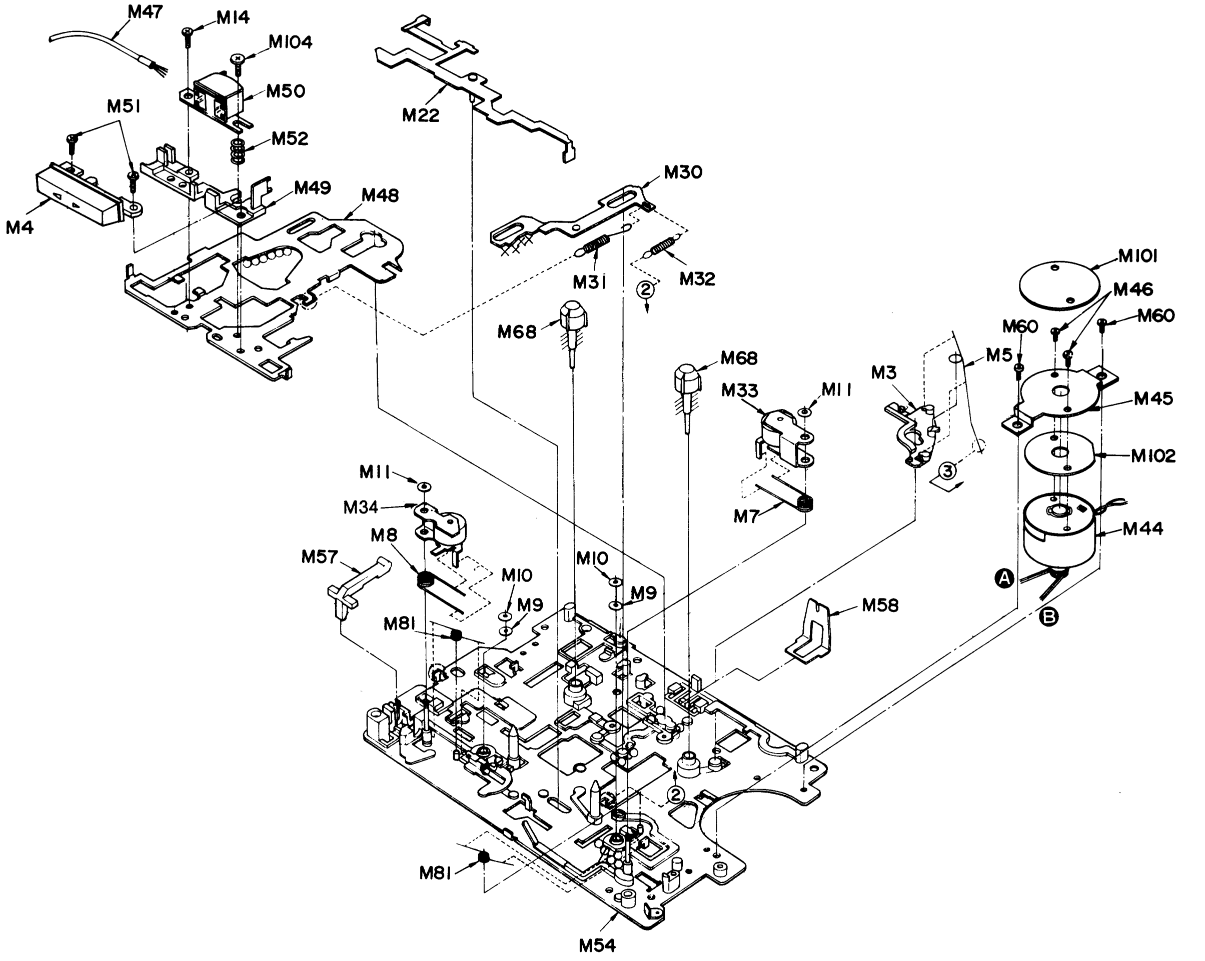
1 2 3 4 5 6

REPLACEMENT PARTS LIST

MECHANICAL PARTS

Ref. No.	Part No.	Part Name & Description
M 1	**1DWAKSA70Z**	Flywheel Ass'y (FWD)
M 2	**2DWAKSA70Z**	Flywheel Ass'y (REV)
M 3	**QMR2233**	Rod, Auto Stop
M 4	**QG0K1009**	Button, Playback (S)
M 5	**QBN2120**	Spring, Auto Stop
M 6	**QBN2121**	Spring, Auto Reverse
M 7	**QBN2122**	Spring, Pinch Roller (FWD)
M 8	**QBN2123**	Spring, Pinch Roller (REV)
M 9	**RNWK212Z**	Washer, Flywheel
M 10	**QBW2140**	Washer, Flywheel
M 11	**QBW2008**	Washer (Pinch Roller etc. M'tg)
M 12	**XQN17 + C6**	Screw ⊕1.7×6 (Reverse Switch M'tg)
M 13	**XTNV17 + 6Z**	Screw ⊕1.7×6 (Motor Switch M'tg)
M 14	**XQN2 + 4.5**	Screw ⊕2×4.5 (Playback Head M'tg)
M 15	**RDVK10Z**	Belt, Flywheel
M 16	**QXRK1029**	Rod Ass'y, Rew
M 17	**QXRK1030**	REW Rod Ass'y
M 18	**QXRK1031**	Stop/Eject Rod Ass'y
M 19	**QML4244**	Lever, Direction
M 20	**RBCK76Z**	Button, Direction
M 21	**QBT2090**	Spring, Direction Lever
M 22	**QXRK1026**	Rod Ass'y, Reverse
M 23	**QXHK1000**	Rod, Pressure Plate Ass'y
M 24	**QBN2126**	Spring, FF Rod
M 25	**QBT2089**	Spring, Auto Stop Detect Lever
M 26	**QMR2230**	Rod (A), Lock
M 27	**QBT2088**	Spring, Lock Rod
M 28	**QML4240**	Lever, Change
M 29	**QBT2091**	Spring, Cassette Up
M 30	**QMR2224**	Rod, Playback
M 31	**RUDK1Z**	Spring, Head Base Plate
M 32	**QBT2096**	Spring, Playback Rod
M 33	**QXLK1005**	Pinch Roller Ass'y (FWD)
M 34	**QXLK1006**	Pinch Roller Ass'y (REV)
M 35	**QXLK1007**	Frame Ass'y
M 36	**QDG1398**	Gear, Playback
M 37	**QBW2030**	Washer Playback Gear
M 38	**QXPK1000**	Playback Pulley Ass'y
M 39	**QDP1948**	Pulley (B), Middle
M 40	**QXLK1009**	FF/REW Frame Ass'y
M 41	**QXGK1000**	FF Gear Ass'y
M 42	**QBN2124**	Spring, FF Frame Ass'y
M 43	**QBW2030**	Washer (FF Gear Ass'y etc. M'tg)
M 44	**MHDN4A3LG**	Motor Ass'y
M 45	**RULK10Z**	Angle, Motor Ass'y
M 46	**XQN17 + A2FZ**	Screw ⊕1.7×2 (Motor Ass'y M'tg)
M 48	**QMK2199**	Head Base Plate
M 49	**QMZ1327**	Spacer, Playback Head
M 50	**RJH4C13YZ**	Playback Head
M 51	**XSB2D5**	Screw ⊕2×5 (Head Adjustment, Playback Button M'tg)
M 51	**XSB2 + N4**	Screw ⊕2×4 (Playback Button M'tg)
M 52	**QBC8027**	Spring, Head Adjustment
M 54	**1UAAKSA70Z**	Mechanism Chassis Ass'y
M 55	**QMR2231**	Rod (B), Lock
M 56	**QML4243**	Lever, Auto Stop Detect
M 57	**QML4242**	Lever, Eject
M 58	**QBP2041**	Spring, Cassette Pressure
M 59	**QBN2127**	Spring, REW Rod
M 60	**XQN16 + C2**	Screw ⊕1.6×2 (Motor Angle M'tg)
M 61	**XSS2 + 4**	Screw ⊕2×4 (Rod Pressure Plate M'tg)

(Front View)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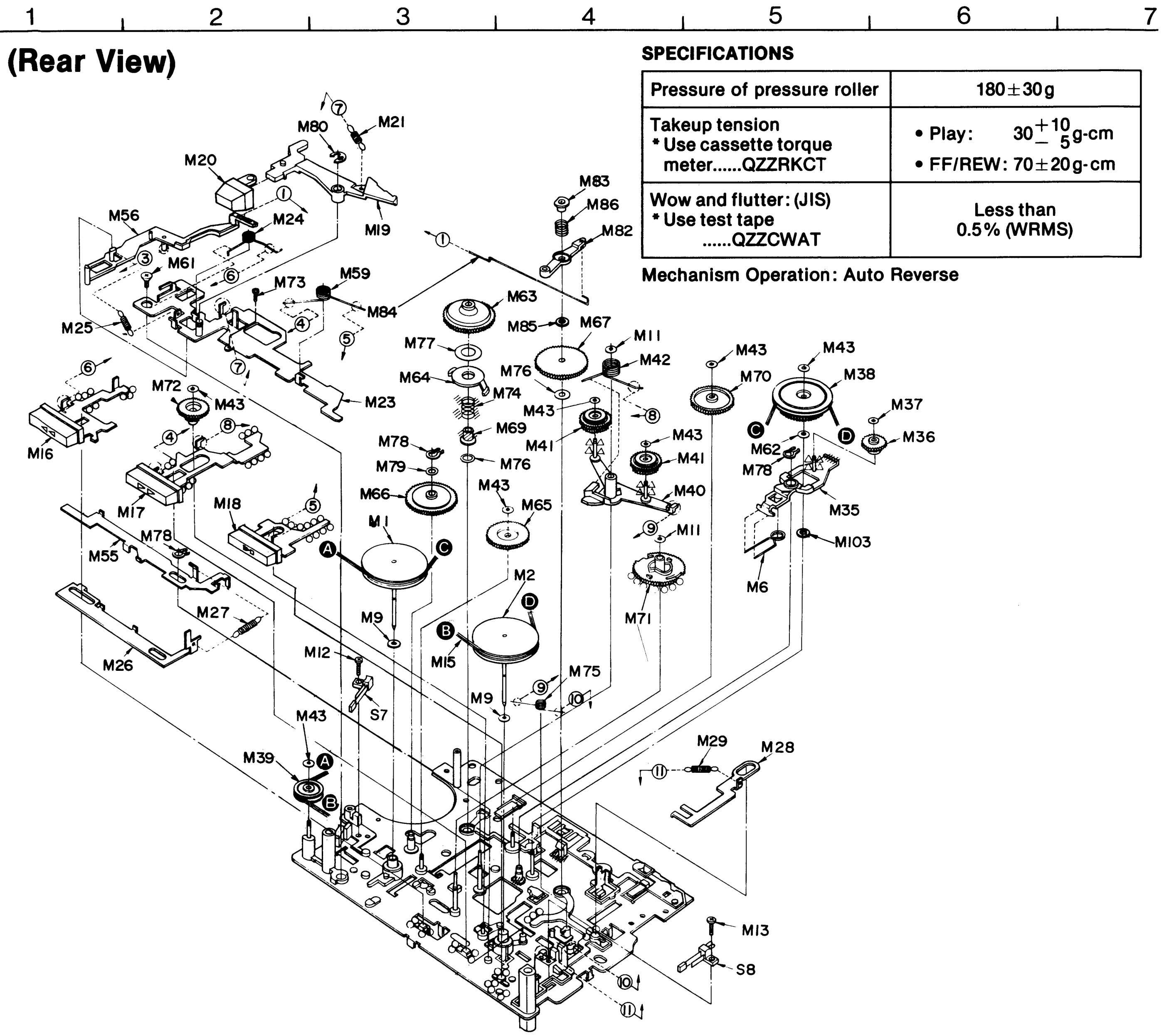
M54

M1~35	4 14 34 11 8 22 10 9 31 10 9 30 32 33 7 11 3 5	1~35
M36-65	51 47 104 50 52 49 57 48 54 58 60 46 60 45 44	36~65
M66-103	81 68 68 101 102	66~103

NOTES:
When changing mechanism parts, apply the specified grease to the area marked show in the drawing "Mechanism Parts Location".

- **"× ×" mark......Rocal paste (Lubricating grease) (RZZOL06)**
- **"○○" mark......Molytone (Lubricating grease) (RZZOL07)**
- **"////" mark (Obrique Lines)......Aero (Lubricating grease) (RZZOL04)**
- **"△△" mark...Dinamic (Lubricating grease) (RZZ0L05)**

(Rear View)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M78
M55
M27
M26
M2
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M28
M13
S8

SPECIFICATIONS

Pressure of pressure roller	180±30g
Takeup tension * Use cassette torque meter......QZZRKCT	• Play: 30^{+10}_{-5}g-cm • FF/REW: 70±20g-cm
Wow and flutter: (JIS) * Use test tape ......QZZCWAT	Less than 0.5% (WRMS)

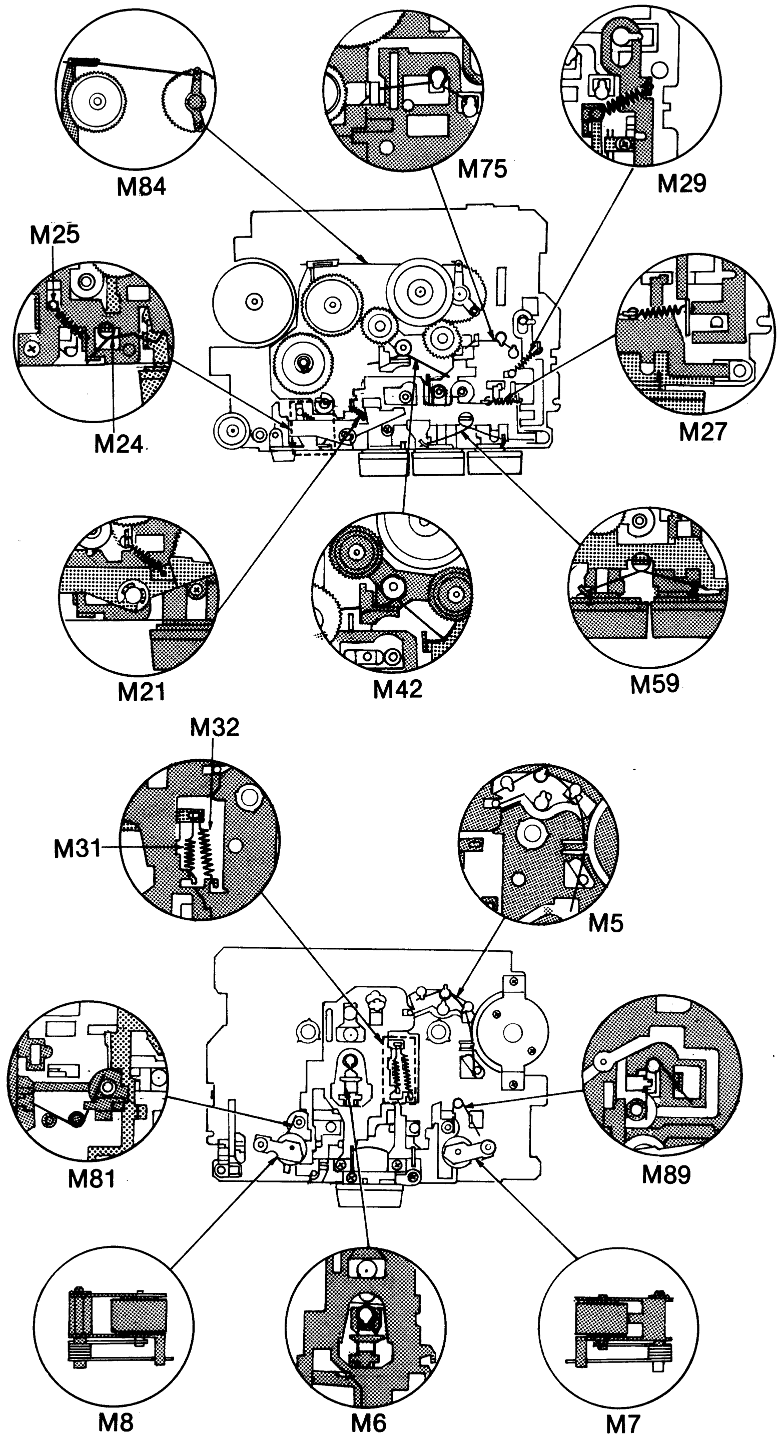
Mechanism Operation: Auto Reverse

1~35	16 25 26 17 20 18 27 24 12 23 19 21 9 L 15 9 2 11 11 29 13 6 28 35	1~35
36~65	55 56 61 43 39 43 59 64 43 63 65 43 41 42 43 41 40 43 62 43 38 37 36	36~65
66~	78 72 73 80 84 66 78 79 77 69 76 74 76 85 75 63 86 67 82 71 70 78 103	66~

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
M 62	**QBW2137**	Washer, Middle Pulley	M 73	**XQS17+A4FN**	Screw ⊕1.7×4 (Rod Pressure Plate M'tg)	M 81	**QBN2128**	Spring, Earth
M 63	**QDG1392**	Gear, Take Up Reel Table	M 74	**QBC8031**	Spring, Auto Stop Detect Pulley	M 82	**RDRK2Y**	Pulley, Reverse Detect
M 64	**QDP2040**	Pulley, Auto Stop Detect	M 75	**QBN2125**	Spring (B), FF Frame	M 83	**RHRK503Z**	Bush, Reverse Detect
M 65	**QDG1394**	Middle Gear, Auto Stop	M 76	**QBW2139**	Washer, Supply and Take Up Reel Table Gear	M 84	**RNRK1Z**	Rod, Detect Lever Connect
M 66	**QDG1393**	Gear, Auto Stop	M 77	**QBW2141**	Washer, Auto Stop Detect Pulley	M 85	**RNWK221Z**	Washer, Reverse Detect Pulley
M 67	**QDG1391**	Gear, Supply Real Table	M 78	**XUEV25VW**	Stop Ring φ2.5 (Auto Stop Gear, Playback Frame Ass'y, Lock Rod (B) M'tg)	M 86	**RUQK4Z**	Spring, Reverse Detect Pulley
M 68	**QDR1188**	Reel Table	M 79	**QBJ3310**	Washer, Auto Stop Gear	M 101	**RUVK7Z**	Sheet, Motor
M 69	**QMB1463**	Bush, REW Reel Table	M 80	**XUC24FT**	Stop Ring φ2.4 (Direction Lever M'tg)	M 102	**SEZMS486**	Plate, Shield
M 70	**QDG1397**	Middle Gear, Reel Table				M 103	**RNWK163Z**	Washer, Playback Pulley
M 71	**QDG1395**	Gear, Reverse						
M 72	**QDG1396**	Middle Gear, Reverse						

SPRING LOCATION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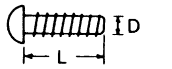
Screw Dimensions Quick Reference

• Dimensions

XSN 3 + 10=Pan head machine screw, 3mm in diameter, 10mm long.

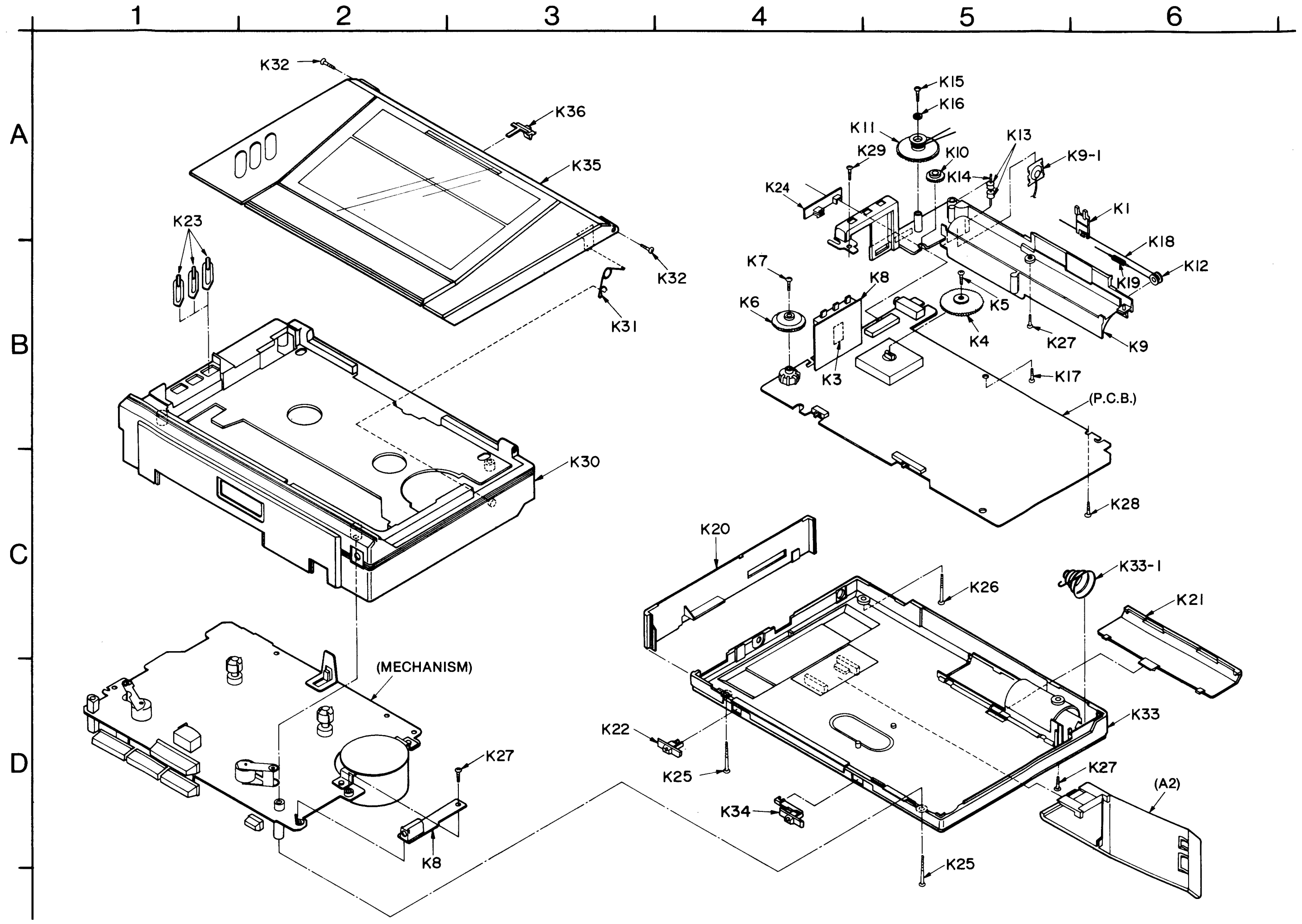
Type/Diameter/Length

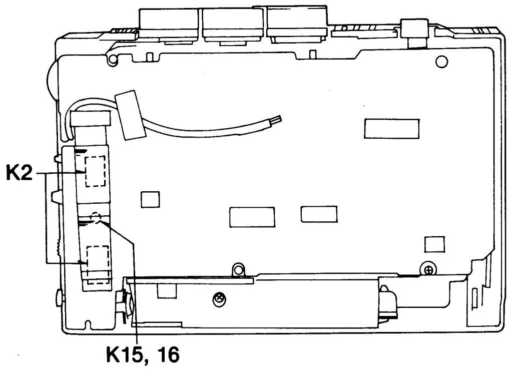


• Types

Precision machine screw	Machine screw	Tapping/Tap-tight machine screw
XQC Flat head	XSB Binding head	XTB Binding head
XQG Oval fillister head	XSC Oval countersunk head	XTC Oval countersunk head
XQH Flat fillister head	XSH Flat fillister head	XTN Pan head
XQS Flat head	XSN Pan head	XTS Flat head
	XSS Flat head	

CABINET PARTS LOCATION





NOTES:

1. The letter in square brackets in the Ref. No. column indicates the color of the product.
   [K]...Black Type, [R]...Red Type, [S]...Silver Type
2. The letter in the circle after the part name indicates the color of the part.
   Ⓚ...Black, Ⓡ...Red, Ⓦ...White, Ⓢ...Silver, Ⓗ...Gray
3. (M)...For U.S.A.
   (C)...For Canada.

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description
		CABINET PARTS
K 1	**RDPK512Z**	Holder, Dial Pointer Ⓦ
K 2	**RHGK601Z**	Cushion
K 3	**RMPK6Z**	Holder, LED
K 4	**RDGK5606Z**	Gear, Drum
K 5	**XQN17+C3**	Screw ⊕1.7×3 (Drum Gear M'tg)
K 6	**RBNK6Z**	Knob, Volume Ⓚ
K 7	**XQN17+C4**	Screw ⊕1.7×4 (Volume Knob M'tg)
K 8	**RUPK64Z**	Circuit Board
K 9	**RZAXSA70M**	Dial Chassis Ass'y
K 9-1	**RJCK30001Y**	Terminal, Battery +
K 10	**RDGK5607Z**	Gear, Middle
K 11	**RBTK5Z**	Knob, Tuning Ⓚ
K 12	**RDR32Z**	Roller (A), Dial
K 13	**QDP1896**	Roller (B), Dial
K 14	**QMN2672**	Saft, Roller
K 15	**XTN2+6B**	Screw ⊕2×6 (Tuning Knob, Circuit Boar M'tg)
K 16	**XWG2**	Washer (Tuning Knob, Circuit Board M'tg)
K 17	**XTN2+5B**	Screw ⊕2×5 (Circuit Board M'tg)
K 18	**RUDK9Z**	Cord, Dial –
K 19	**RDZ03Y**	Spring, Dial Cord
K 20	**RKEK5Z**	Panel, Operation Ⓚ
K 21 [R]	**RKKK9Z2**	Cover, Battery Ⓡ
K 21 [S]	**RKKK9Z7**	Cover, Battery Ⓢ
K 21 [K]	**RKKK9Z**	Cover, Battery Ⓚ
K 22	**RBDK20Z**	Knob, FM Sens Ⓚ
K 23	**RBEK4Z**	Button, Preset Equalizer Ⓢ
K 24	**RBDK19Z**	Knob, Band Ⓚ
K 25 [R] [S]	**XTN26+30GY**	Screw ⊕2.6×30 (Rear Cabinet M'tg)
K 25 [K]	**XTN26+30GZ**	Screw ⊕2.6×30 (Rear Cabinet M'tg)

Ref. No.	Part No.	Part Name & Description
K 26 [R] [S]	**XTN2+24JY**	Screw ⊕2×24 (Rear Cabinet M'tg)
K 26 [K]	**XTN2+24JZ**	Screw ⊕2×24 (Rear Cabinet M'tg)
K 27	**XTN2+6B**	Screw ⊕2×6 (Rear Cabinet, DC Circuit Board etc. M'tg)
K 28	**XNQC17+C3**	Screw ⊕1.7×3 (Mechanism M'tg)
K 29	**XSN2+4**	Screw ⊕2×4 (Dial Chassis M'tg)
K 30 [K]	**RYMXSA70M**	Front Cabinet Ass'y
K 31	**RUWK28Z**	Spring (Eject)
K 32 [R] [S]	**QHQ1362**	Screw (Cassette Lid M'tg)
K 32 [K]	**QHQ1362K**	Screw (Cassette Lid M'tg)
K 33 [R]	**RYFXSA70M2**	Rear Cabinet Ass'y Ⓡ
K 33 [S]	**RYFXSA70M7**	Rear Cabinet M'tg Ⓗ
K 33 [K]	**RYFXSA70M**	Rear Cabinet Ass'y Ⓚ
K 33-1	**RJCK70001Z**	Spring (Battery –)
K 34	**RBDK21Z**	Knob, Function Ⓚ
K 35 [R]	**RYQXSA70M2**	Cassette Lid Ass'y Ⓡ
K 35 [S]	**RYQXSA70M8**	Cassette Lid Ass'y Ⓢ
K 35 [K]	**RYQXSA70M**	Cassette Lid Ass'y Ⓚ
K 36	**RDPK511Z**	Dial Pointer Ⓦ
		ACCESSORIES
A 1	**RP9546M**	Headphone
A 2 [R] [K]	**RKE447Z4**	Belt Holder Ⓚ
A 2 [S]	**RKE447Z2**	Belt Holder Ⓗ
A 3 (M)	**RQXK4043Z**	Operating Instructions
A 3 (C)	**RQXK4049Z**	Operating Instructions
		PACKINGS
P 1	**RPKK1042Z**	Gift Box
P 2	**RPNK3020Z**	Pad
P 3	**RPEK116Z**	Sheet
P 4	**XZB20X20A04**	Polyethylene Cover

CAPACITORS AND RESISTORS

ELECTRICAL PARTS LIST

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value (100Ω)
ERX	2	AN	J	2R2
Type	Wattage	Shape	Tolerance	Value (2.2Ω)

Resistor Type	Wattage	Tolerance
ERD: Carbon	10 : ⅛ W	J : ±5%
ERG: Metal Film	12 : ½ W	
ERX: Metal Film	25 : ¼ W	
ERQ: Fuse Type Metal	1 : 1 W	
RRD: Carbon (Chip Type)	18 : ⅛ W	

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value (1000 pF)	Tolerance	Peculiarity
ECEA	50	M	R47	
Type	Voltage	Peculiarity	Value (0.47 µF)	

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA: Electrolytic	0J : 6.3 V	2H : 500 V DC	C : ±0.25 pF
ECCD: Ceramic	1A : 10 V	1 : 100 V	J : ±5%
ECKD: Ceramic	1C : 16 V	DKC : 400 V AC	K : ±10%
ECQM: Polyester	1E : 25 V		Z : +80%, −20%
	1H : 50 V		
ECQP: Polypropylene	1V : 35 V		P : +100%, −0%
	50 : 50 V		
ECET: Electrolytic			
ECEA□□□N: Non Polar Electrolytic	25 : 25 V		
	16 : 16 V		
QCU □: Ceramic (Chip Type)			
ECUX: Ceramic (Chip Type)			

REPLACEMENT PARTS LIST

Ref. No.	Part No.
CAPACITORS	
C 1, 5, 20, 312	**RCUX1H101J**
C 2, 3, 9	**RCUX1H222KB**
C 4	**RCUX1H150JC**
C 6	**RCUX1H160JC**
C 7	**RCBS1C222MX**
C 8	**RCUX1H070DC**
C 10, 13, 18, 108, 208	**RCUX1H103KB**
C 11	**RCUX1H060DC**
C 12, 14, 16, 17, 22, 24, 28, 116, 216	**RCUX1E223KB**
C 19, 301	**ECEA0GKS330**
C 21	**ECUX1E333MB**
C 23	**RCUX1H681KB**
C 25, 30, 35, 303, 304, 306, 307	**ECEA0GKS221**
C 26, 302	**ECEA1HKS2R2**
C 27	**ECUX1E104KB**
C 29	**RCQP2A102JA**
C 31, 111, 211	**ECEA1HKS010**
C 32, 34	**RCUX1H153KB**
C 33	**ECEA1EKS4R7**
C 36, 37	**ECEA1HKSR22**
C 38	**RCBS1H101KB**
C 101, 102, 106, 201, 202, 206	**RCUX1H152KB**
C 103, 203	**ECEA0JKS220**
C 104, 204	**RCUX1H123KB**
C 105, 213	**ECSE1CT105SL**
C 107, 207	**ECUX1E224ZF**
C 109, 209	**ECEA0GKS101**
C 110, 210	**ECSE0GT4750L**
C 112, 212, 308, 309, 310	**RCUX1H102KB**
C 113, 205	**ECSE1CT105SR**
C 114, 214	**RCUX1H562KB**
C 115, 215	**ECSE1VT2240R**
C 305	**ECSF1AE475**
C 311	**ECBT1H101J**
RESISTORS	
R 2	**ERJ6GCJ332**
R 3, 109, 209	**ERJ6GCJ330**
R 4, 8, 20, 22	**ERJ6GCJ470**
R 5, 110, 112, 210, 212	**ERJ6GCJ222**
R 7, 17	**ERJ6GCJ101**
R 9, 10, 12, 113, 213	**ERJ6GCJ102**
R 11	**ERD16TJ101**
R 13, 18	**ERJ6GCJ822**
R 14	**ERJ6GCJ220**
R 15	**ERD16TJ331**
R 23, 24	**ERD16TJ472**
R 25	**ERD16TJ102**
R 26	**ERJ6GCJ334**
R 28	**ERD25FJ331**
R 101, 201	**ERJ6GCJ121**
R 102, 202	**ERJ6GCJ123**
R 103, 108, 203, 208	**ERJ6GCJ154**
R 104, 204, 301, 302, 308	**ERJ6GCJ472**
R 106, 206	**ERJ6GCJ272**
R 107, 207	**ERJ6GCJ682**
R 111, 211	**ERD16TJ103**
R 303	**ERD16TJ470**
R 304	**ERSB10J103**
R 305	**ERD16TJ821**
R 306	**ERSB39JR40**
R 307	**ERD16TJ4R7**
R 309	**ERJ6GCJ103**
CHIP JUMPER	
RJ 1, 2, 3, 4, 5	**ERJ6GCJ000**

KTB
T.H/K.H MC Printed in Japan Ⓗ

ORDER NO. GAD8607432A3

Service Manual

Radio Cassette

RX-SA70

(Silver) (Red)
(Black)

Stereo Radio Cassette Player

Color Variation

[X]	[L] [XC] [XF]
(Silver) (Black) (Red)	(Black)

This is the Service Manual for the following areas.

- [X] …For Asia, Latin America, Middle East and Africa areas.
- [L] …For Australia.
- [XC] …For Saudi Arabia.
- [XF] …For New Zealand.

- ●Please use this manual together with the service manual for model No. RX-SA70 order No. GAD8605569C1.
- ●This service manual indicates the main differences between; Original RX-SA70 [M] and RX-SA70 [X] [L] [XC] [XF].

SPECIFICATIONS

General:			
Power Requirement:	Battery; 3V (two"AA" size penlight batteries) (Panasonic UM-3 or equivalent)	→	**Battery; (two UM-3"AA" size batteries) (National UM-3 or equivalent)**
Dimensions:	3 5/16"(W)X5"(H)X1 1/2"(D) (8.5cm(W)X12.7cm(H)X3.85cm(D)	→	**85mm(W)X127mm(H)X38.5mm(D)**
Weight:	310g (11 oz) without batteries		**310g without batteries**
Radio Section:			
Radio Frequency Range:	AM; 525 ~ 1610kHz	→	**AM; 530 ~ 1605kHz**
	RX-SA70 [M] (Original)		**RX-SA70 [X] [L] [XC] [XF]**

REPLACEMENT PARTS LIST

Notes:

1. The letter in round brackets in the Ref. No. column indicates the shipping destination.
   (X) ... For Asia, Latin America, Middle East and Africa areas. (L) ... For Australia. (XC) ... For Saudi Arabia. (XF) ... For New Zealand.
2. The letter in square brackets in the Ref. No. column indicates the color of the product.
   [K] ... Black Type, [R] ... Red Type, [S] ... Silver Type
3. The letter in the circle after the part name indicates the color of the part.
   Ⓚ ... Black, Ⓡ ... Red, Ⓢ ... Silver

Ref. No.	Description	Part Number		Remarks
		RX-SA70 [M] (Original)	RX-SA70 [X] [L] [XC] [XF]	
K20	Panel, Operation Ⓚ	RKEK5Z	**RKEK5XA**	
K32 [R] (X)	Screw (Cassette Lid M'tg)	QHQ1362	**QHQ1362K**	
K33 [K]	Rear Cabinet Ass'y Ⓚ	RYFXSA70M	**RYFXSA70X**	
K33 [S] (X)	Rear Cabinet Ass'y Ⓢ	RYFXSA70M7	**RYFXSA70X7**	
K33 [R] (X)	Rear Cabinet Ass'y Ⓡ	RYFXSA70M2	**RYFXSA70X2**	
K35 [K]	Cassette Lid Ass'y Ⓚ	RYQXSA70M	**RYQXSA70X**	
K35 [S] (X)	Cassette Lid Ass'y Ⓢ	RYQXSA70M8	**RYQXSA70X8**	
K35 [R] (X)	Cassette Lid Ass'y Ⓡ	RYQXSA70M2	**RYQXSA70X2**	
A1 (X) (XC)	Headphones	RP9546M	**RPHV110J**	
A1 (L) (XF)	Headphones	RP9546M	**RP9545X**	
A1-1 (X) (XC)	Ear Pad Ⓚ	——	**RWR84622A35**	**Added**
A1-1 (L) (XF)	Ear Pad Ⓚ	——	**RWR84615A29**	**Added**
A3	Operating Instructions	RQXK4043Z	**RQXK4051ZA**	
A4	Cassette Tape	——	**RJN41Z**	**Added**
P1 (X) (XC)	Gift Box	RPKK1042Z	**RPKK1057ZA**	
P1 (L) (XF)	Gift Box	RPKK1042Z	**RPKK1055ZA**	
P5	Pad (Cassette Tape)	——	**QPSK1142**	**Added**

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